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EXAMINER

FRITZ, BRADFORD F

ART UNIT

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2442

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/645,087	WARWICK ET AL.	
	Examiner	Art Unit	
	BRADFORD F. FRITZ	2442	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 September 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8, 10-22, 24-33 and 35-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8, 10-22, 24-33 and 35-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. Applicant's arguments, filed , with respect to the rejection(s) of claim(s) 1-8, 10-22, and 24-31 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Lamb (6,892,264), Iwami (2002/0156867), Thrasher (7,275,103), Schulter et al. (2002/0156612), and Chadalapaka (6,845,403).
2. Applicant's other arguments filed 9/28/09 with respect to claims 32-33 and 35-37 have been fully considered but they are not persuasive. The Examiner notes that the Applicant only specifically addressed the claim 1 in the remarks, the same limitations found in claim 1 that the Examiner found to be persuasive are not found in claim 32 (i.e., *"wherein the one or more devices includes at least one device that is a virtual SCSI device accessible through an iSCSI protocol"*).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 2442

4. Claims 1-8, 10-22, and 24-31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamb (6,892,264) in view of Iwami (2002/0156867), in view of Thrasher (7,275,103), further in view of Schulter et al. (2002/0156612), hereinafter referred to as Schulter.

5. Regarding claims 1 and 15, Lamb disclosed an act of identifying a set of the one or more devices that can be accessed locally or over a network (column 3, lines 16-30 and column 63, lines 60-67, Fig. 1); an act of generating a target that identifies a set of the one or more devices (column 3, lines 16-30 and column 63, lines 60-67), and that includes at least one corresponding device identifier (column 3, lines 16-30 and column 63, lines 60-67); an act of associating client authorization information identified by the network provider with the target that identifies set of the one or more devices (column 3, lines 42-50 and column 63, lines 60-67).

However, Lamb does not explicitly teach wherein the set of one or more devices is identified based on each of the devices having at least one common group of clients. Iwami teaches wherein the set of one or more devices is identified based on each of the devices having at least one common group of clients (paragraphs 0030-0031, 0038-0039, 0041 and Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Iwami in the system of Lamb because both are from the same field of endeavor and in order to allow a storage server provider to provide restricted access to storage resources to only authorized users or group of users (paragraph 0015, e.g. users from the same company).

However, the Lamb-Iwami combination does not teach an act of dynamically assigning the target to a port through a protocol-independent port driver at the network provider, such that only clients authorized by the associated client information are allowed to access the assigned port, thereby allowing only the clients access to the set of the one or more device through the target, wherein the assignment of the port is dependent upon load balancing of the network provider.

Thrasher teaches an act of dynamically assigning the target to a port through a protocol-independent port driver at the network provider (column 11, lines 27-60 and Fig. 6), such that only clients authorized by the associated client information are allowed to access the assigned port (column 11, lines 27-60 and Fig. 6), thereby allowing only the clients access to the set of the one or more device through the target (column 11, lines 27-60 and Fig. 6), wherein the assignment of the port is dependent upon load balancing of the network provider (column 11, lines 27-60 and Fig. 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Thrasher in the Lamb-Iwami combination because all are from the same field of endeavor and in order to “proactively identify bottlenecks and to reconfigure SAN pathing on the fly to improve the flow of data through the SAN” (column 1, lines 65 – column 2, line 3).

However, the combination does not explicitly teach wherein the one or more devices includes at least one device that is a virtual SCSI device accessible through an iSCSI protocol. Schulter teaches wherein the one or more devices includes at least one device that is a virtual SCSI device accessible through an iSCSI protocol (paragraphs

Art Unit: 2442

0147, 0173 and Fig. 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Schulter in the combination above because all are from the same field of endeavor and in order to use iSCSI protocol to access virtual storage devices over the internet.

6. Regarding claims 2 and 16, Lamb disclosed wherein the at least one of the one or more devices can be accessed locally through a local access protocol (column 19, lines 20-27).

7. Regarding claims 3 and 17, Lamb disclosed wherein the at least one of the one or more devices is a network device that can be accessed on a network through a network access protocol (column 19, lines 20-27).

8. Regarding claims 4 and 18, Lamb disclosed wherein the act of identifying one or more devices further includes an act of creating one or more devices that can be accessed over the network (column 19, lines 20-27 and Fig. 1).

9. Regarding claims 5 and 19, Lamb disclosed wherein the act of creating one or more devices includes an act of identifying a at least one of a partition and file (column 63, lines 5-25 and column 74, lines 1-14), wherein the at least one of a partition and file represents at least a portion of one of the one or more devices (column 63, lines 5-25 and column 74, lines 1-14), and wherein the at least one of a partition and file can be configured by the network provider to provide the client modifiable access to the portion of the one of the one or more devices (column 63, lines 5-25 and column 74, lines 1-14).

Art Unit: 2442

10. Regarding claims 6 and 20, Lamb disclosed an act of providing client access to one or more of a port (column 63, lines 60-67 and column 59, lines 1-12), a WWN (column 31, lines 55-65), and a portal through the protocol-independent port driver (column 59, lines 5-15), such that the protocol-independent port driver is accessed through one or more protocol-dependent mini-ports (column 63, lines 60-67 and column 59, lines 5-15).

11. Regarding claims 7 and 21, Lamb disclosed wherein the protocol-independent port driver and one or more protocol-dependent mini-port drivers are managed by the centralized service (column 63, lines 60-67 and column 59, lines 5-15), and wherein the one or more protocol-dependent miniport drivers plug-in to the protocol-independent port driver (column 63, lines 60-67 and column 59, lines 5-15).

12. Regarding claims 8 and 22, Lamb disclosed wherein at least one of the one or more miniport drivers communicates through one or more of an Ethernet, Token Ring, fiber channel, USB, or wireless protocol (column 66, lines 1-20).

13. Regarding claims 10 and 24, Lamb disclosed wherein the virtual SCSI device is a storage device (column 45, lines 4-20), and the network comprises a storage area network (column 45, lines 4-20).

14. Regarding claims 11 and 25, Lamb disclosed wherein the storage device is one or more of an internal or external magnetic storage medium, an optical storage medium, and a tape backup drive (column 63, lines 60-67 and column 59, lines 1-12).

15. Regarding claims 12 and 26, Lamb disclosed wherein the network provider manages one or more targets, one or more drivers, and authentication information for

Art Unit: 2442

one or more clients through a centralized directory service (column 63, lines 60-67 and column 59, lines 1-12).

16. Regarding claims 13 and 27, Lamb disclosed wherein the network device identifier is identified by a target name and a LUN that has been assigned to the at least one device by the centralized directory service (column 63, lines 60-67 and column 59, lines 1-12).

17. Regarding claims 14 and 28, Lamb disclosed wherein the logical unit number refers to one or more of a device, a plug-and-play identifier for a device (abstract), a global unique identifier for a device; a device driver that interfaces with a device (column 63, lines 60-67 and column 59, lines 5-15); and at least one of a partition and file that represents a portion of a device (column 63, lines 5-25 and column 74, lines 1-14).

18. Regarding claim 29, Lamb disclosed an act of identifying a set of the one or more partitions or files representing portions of devices that can be accessed locally or over a network (column 3, lines 16-30 and column 63, lines 60-67, Fig. 1); an act of generating a target that identifies a set of the one or more devices (column 3, lines 16-30 and column 63, lines 60-67), and that includes at least one corresponding device identifier (column 3, lines 16-30 and column 63, lines 60-67); an act of associating client authorization information identified by the network provider with the target that identifies the of the one or more devices (column 3, lines 42-50 and column 63, lines 60-67).

However, Lamb does not explicitly teach wherein the set of one or more devices is identified based on each of the devices having at least one common group of clients, the set being based on one or more partitions or files having commonly authorized client

Art Unit: 2442

access and consisting of only partitions or files to which the client has been assigned and to which the client is to be provided access. Iwami teaches wherein the set of one or more devices is identified based on each of the devices having at least one common group of clients (paragraphs 0038-0039, 0041 and Fig. 3), the set being based on one or more partitions or files having commonly authorized client access and consisting of only partitions or files to which the client has been assigned and to which the client is to be provided access (paragraphs 0038-0039, 0041 and Fig. 3). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Iwami in the system of Lamb because both are from the same field of endeavor and in order to allow a storage server provider to provide restricted access to storage resources to only authorized users or group of users (paragraph 0015, e.g. users from the same company).

However, the Lamb-Iwami combination does not explicitly teach a step for dynamically exposing the set of the one or more partitions or files to the client through a specific one of a dynamically assigned network port, a WWN, and a portal, such that the client can access the set of the one or more partitions or files identified by the target when the client has access to the specific one of a dynamically assigned network port, a WWN, and portal, and when the client presents the associated client authorization to the network provider.

Thrasher teaches a step for dynamically exposing the set of the one or more partitions or files to the client through a specific one of a dynamically assigned network port, a WWN, and a portal (column 11, lines 27-60 and Fig. 6), such that the client can

Art Unit: 2442

access the set of the one or more partitions or files identified by the target when the client has access to the specific one of a dynamically assigned network port, a WWN, and portal (column 11, lines 27-60 and Fig. 6), and when the client presents the associated client authorization to the network provider (column 11, lines 27-60 and Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Thrasher in the Lamb-Iwami combination because all are from the same field of endeavor and in order to “proactively identify bottlenecks and to reconfigure SAN pathing on the fly to improve the flow of data through the SAN” (column 1, lines 65 – column 2, line 3).

However, the combination does not explicitly teach wherein the one or more devices includes at least one device that is a virtual SCSI device accessible through an iSCSI protocol. Schulter teaches wherein the one or more devices includes at least one device that is a virtual SCSI device accessible through an iSCSI protocol (paragraphs 0147, 0173 and Fig. 8). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Schulter in the combination above because all are from the same field of endeavor and in order to use iSCSI protocol to access virtual storage devices over the internet.

19. Regarding claim 30, Lamb disclosed an act of assigning the target to a port through a protocol-independent port driver at the network provider (column 63, lines 60-67 and column 59, lines 5-15); and an act of providing client access to the specific one of a port, a WWN, and a portal through the protocol independent port driver (column 63,

Art Unit: 2442

lines 60-67 and column 59, lines 5-15), such that the protocol-independent port driver is accessed through one or more protocol-dependent mini-ports (column 63, lines 60-67 and column 59, lines 5-15).

20. Regarding claim 31, Lamb disclosed wherein the client is provided access to the specific one of a port, a WWN (column 63, lines 60-67 and column 59, lines 5-15), and a portal by virtue of being authenticated at one or more of a local centralized service provider, and a remote authentication database (column 63, lines 60-67 and column 59, lines 5-15).

21. Claims 32, 33, and 35-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lamb (6,892,264) in view of Iwami, in view of Thrasher, further in view of Chadalapaka (6,845,403).

22. Regarding claim 32, Lamb disclosed an act of identifying a one or more device identifiers corresponding to one or more partitions or files representing storage devices on a storage service provider (column 3, lines 16-30 and column 63, lines 60-67, Fig. 1), wherein the partitions of files allow access to portions of the storage devices and enable a first device type to emulate a second device type (column 63, lines 5-25 and column 74, lines 1-14), wherein the one or more device identifiers includes a target name and a LUN that has been assigned to the one or more partitions of files by a centralized directory service (column 3, lines 42-50 and column 63, lines 60-67);

an act of receiving from the centralized directory service a modifiable client resource that identifies client authorization to access the storage device (column 3, lines

Art Unit: 2442

42-50 and column 63, lines 60-67), and a portion of the storage device that the client can access (column 3, lines 42-50 and column 63, lines 60-67),

wherein the centralized directory maintains authentication information for the client, and at least one of a work group identity, network location (column 3, lines 42-50 and column 63, lines 60-67), and physical location, and further maintains LUN information for the one or more partitions or files and configuration information defining how the client accesses a partition or file representing a storage device (column 3, lines 42-50 and column 63, lines 60-67), wherein the centralized directory service includes the same LUN assigned to multiple different partitions or files, such that a LUN has relevancy only within a particular target (column 3, lines 42-50 and column 63, lines 60-67);

an act of creating a target containing one or more logical unit numbers that have been assigned to the identified device identifiers (column 63, lines 60-67 and column 59, lines 1-12), wherein access to the target is provided according to the modifiable client resource (column 3, lines 42-50 and column 63, lines 60-67);

an act of providing the client computer access to the file or partition representing the storage device identified by the target through a client-restricted port on the storage service provider (column 3, lines 42-50 and column 63, lines 60-67), such that if the client has knowledge of, access to, the client-restricted port (column 3, lines 42-50 and column 63, lines 60-67), the client can access the storage device by providing the storage service provider with client authorization (column 3, lines 42-50 and column 63, lines 60-67).

However, Lamb does not explicitly teach wherein the centralized directory maintains authentication information for the client, and at least one of a work group identity, network location, and physical location, and further maintains configuration information defining how the client accesses a partition or file representing a storage device.

Iwami teaches wherein the centralized directory maintains authentication information for the client, and at least one of a work group identity, network location (paragraphs 0038-0039, 0041 and Fig. 3), and physical location (paragraphs 0038-0039, 0041 and Fig. 3), and further maintains configuration information defining how the client accesses a partition or file representing a storage device (paragraphs 0038-0039, 0041 and Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Iwami in the system of Lamb because both are from the same field of endeavor and in order to allow a storage server provider to provide restricted access to storage resources to only authorized users or group of users (paragraph 0015, e.g. users from the same company).

However, the Lamb-Iwami combination does not explicitly teach wherein the client restricted port is dynamically assigned by the centralized directory service based on the storage service provider, wherein the client restricted port is dynamically assigned by the centralized directory service based on storage service provider load balancing and failover protection.

Thrasher teaches wherein the client restricted port is dynamically assigned by the centralized directory service based on the storage service provider (column 11, lines 27-60 and Fig. 6), wherein the client restricted port is dynamically assigned by the centralized directory service based on storage service provider load balancing and failover protection (column 11, lines 27-60 and Fig. 6).

It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Thrasher in the Lamb-Iwami combination because all are from the same field of endeavor and in order to “proactively identify bottlenecks and to reconfigure SAN pathing on the fly to improve the flow of data through the SAN” (column 1, lines 65 – column 2, line 3).

However, the Lamb-Iwami-Thrasher combination does not explicitly teach providing access with a Uniform Resource Locator including the assigned port number. Chadalapaka teaches providing access with a Uniform Resource Locator including the assigned port number (column 9, lines 20-57). It would have been obvious to one of ordinary skill in the art at the time of the invention to include the features as taught by Chadalapaka in the Lamb-Iwami-Thrasher combination because all are from the same field of endeavor and in order to “enable simple devices to operate without name-to-address conversion services” (column 9, lines 40-45).

23. Regarding claim 33, Lamb disclosed wherein centralized directory service receives client access information from at least one of a local and remote database (column 37, lines 2-15).

Art Unit: 2442

24. Regarding claim 35, Lamb disclosed wherein the client-restricted port is managed by the centralized service and a protocol-independent port driver that receives network traffic through one or more protocol-dependent mini-port drivers (column 63, lines 60-67 and column 59, lines 5-15).

25. Regarding claim 36, Lamb disclosed wherein the one or more protocol-dependent mini-port drivers are plug-ins to the protocol-independent port driver (column 63, lines 60-67 and column 59, lines 5-15).

26. Regarding claim 37, Lamb disclosed wherein at least one of the one or more mini-port drivers communicates through one or more of an Ethernet, Token Ring, USB, fiber channel, or wireless connection protocol (column 2, lines 50-60 and column 22, lines 30-46).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRADFORD F. FRITZ whose telephone number is (571)272-3860. The examiner can normally be reached on 8:00 - 4:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Andrew Caldwell can be reached on 571-272-3868. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 2442

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/B. F. F./
Examiner, Art Unit 2442

/Joon H. Hwang/
Supervisory Patent Examiner, Art Unit 2447